Chapter 4
Outline of Regulatory Agency Oversight of LLRW and MW

4-1. Oversight Agencies

Appendix C of this EM is a listing of major laws and regulations pertinent to LLRW and MW disposal, site remediation, and operational practices. The following paragraphs describe the various agencies propounding those regulations. This chapter is not an exhaustive description or listing of all applicable laws and regulations. Identification of applicable laws and regulations is necessarily a site-specific determination made only after full consultation with Office of Counsel. Table 4-1 describes the roles of major federal agencies in regulating LLRW and MW. Table 4-2 describes the areas of responsibility within the DoD for LLRW and MW.

a. DA.

(1) Table 4-3 describes the areas of responsibility for LLRW and MW within the DA. The U.S. Army Materiel Command is responsible for NRC licensing of radioactive material for the Army. The U.S. Army Safety Office is responsible for safety and health issues involving radioactive materials. The applicable regulation, Army Regulation (AR) 385-11, applies to all DA agencies, commands, and installations that procure, use, store, or dispose of radioactive materials or ionizing-radiation-producing devices. Implementation of AR 385-11 throughout USACE is accomplished through ER 385-1-80, "Ionizing Radiation Protection."

(2) The U.S. Army has been appointed the executive agent for disposal of Department of Defence (DoD) LLRW. The executive agent is responsible for inventorying and reporting all DoD LLRW. The executive agent also serves as the point of contact for the disposal compacts, and oversees two DoD storage facilities for LLRW that cannot be disposed of due to compact status.

(3) USACE is responsible for remediation of LLRW and MW at FUDS, and, at the discretion of the base commander, for remediation of LLRW and MW on active and base realignment and closure (BRAC)-listed bases. USACE disposal of DoD LLRW is coordinated through the HTRW CX to the executive agent. Tables 4-4 through 4-10 describe technical roles and responsibilities of USACE elements for LLRW and MW projects and submittals.

Table 4-1
Major Federal Agencies' Roles Pertaining to LLRW and MW

Department of Transportation (DOT)	Environmental Protection Agency (EPA)	Nuclear Regulatory Commission (NRC)	Occupational Safety and Health Administration (OSHA)	Department of Energy (DOE)	Department of Defense (DoD)
DOT regulations apply to all intrastate and interstate shipment of DOT-defined LLRW (>2,000 pCi/gm) and MW.	EPA regulations apply to all MW and LLRW. EPA has CERCLA authority over radioactive waste responses, but DOE and DoD may be authorized to take the lead at their own sites. Under the Federal Facility Compliance Act (FFCA), RCRA-authorized states may be empowered to oversee sites contaminated with MW.	NRC regulations apply to source by-product and special nuclear materials licenses.	OSHA regulations apply to the health and safety of workers on hazardous, toxic, and radioactive sites.	DOE regulations apply to radioactive materials, wastes, and all DOE sites through the Atomic Energy Act as amended.	See Table 4-2 for areas of responsibility within DoD.

Table 4-2
DoD Areas of Responsibility for LLRW and MW

Department of the Army (DA)	Defense Logistics Agency (DLA)	Department of the Navy	Department of the Air Force
U.S. Army assigned to be the DoD executive agent for managing disposal of radioactive waste with the exception of the Navy propulsion program. See Table 4-3 for responsibilities within DA.	Warehousing and distribution for instruments and articles containing radioactive material. DLA does not typically generate MW or LLRW and would be under DA authority only if there was generation of MW and/or LLRW.	DA is executive agent for disposal of Navy MW and/or LLRW. The nuclear propulsion program is not under DA authority.	U.S. Air Force (AF) Radio-Isotope Committee (RIC) has the broad-scope license for radioactive instruments and articles. AF retains approval authority for DA remediations on AF bases.

Table 4-3
DA Areas of Responsibilities for MW and LLRW

Corps of Engineers (USACE)	Army Materiel Command (AMC)	DA Safety Office (DACS-SF)
. Responsible for FUDS remediations including radioactive wastes ● May be assigned remediation of radioactive wastes at BRAC, Installation Restoration Program (IRP) and DOE installations ● May support EPA Superfund program or work for others ● Contract responsible person officer (CRPO) responsible for obtaining NRC license and decontamination and decommissioning alternatives risk assessment/OCE (DARA/OCE) permit ● HTRW CX responsible for review and coordination	. Responsible for NRC licensing of radioactive materials for the Army . IOC is responsible for managing LLRW disposal, coordination, and recordkeeping for DoD	. Responsible for health and safety issues involving radioactive materials for DA . Health and safety authority applies to USACE elements doing work on non-DoD sites ● Authority does not cover contractors working for USACE

b. DOE.

(1) DOE has responsibility for the regulation, operation, maintenance, and restoration of all facilities belonging to itself which contain hazardous and radioactive materials and wastes, whether the facility is operated by DOE or by its contractors. These facilities include the range of wastes incident from weapons manufacturing down through small-scale scientific laboratories. Unique among Federal agencies, the DOE finds itself in both the role of regulator and the regulated party at the same facility.

(2) The DOE is presently responsible for environmental restoration of its facilities contaminated by HTRW generated by past practices. The DOE acknowledges and complies with the regulations of other pertinent Federal, state, and local agencies when dealing with the subjects of HTRW and contaminated site remediation. This is most often accomplished, however, by direction to the various contractors operating DOE facilities.

(3) Additionally, the DOE has a Congressional mandate to establish practices and facilities for the disposal of HLRW. Presently, such facilities are not fully

Table 4-4
Technical Roles and Responsibilities of USACE Elements for LLRW and MW Projects and Submittals, CERCLA or RCRA Site Identification Phase

CERCLA or RCRA Stage	Activity	HTRW Design District	USACE District	USACE Division	HTRW CX
Identification	Site background, planning, and objectives	Execute, approve	Coordinate	Coordinate	Review
Preliminary Assessment (PA)	–Scope of work –Limited SSHP –Background and site history and data collection –Site visit – PA report	Execute, approve	Coordinate	Coordinate	Review
Site Inspection (SI)	–Scope of work –Work plan development (DQOs) SSHP –Sampling and analysis plan (SAP) – Field investigations –Sample analysis and data assessment –Data evaluation and fate and transport analysis –Risk screening analysis – Regulatory analysis – Report	Execute, approve	Coordinate	Coordinate	Review
RCRA Facility Assessment (RFA)	RFA has many similar activities with the CERCLA PA/SI. EPA or RCRA-authorized state performs RFA. USACE roles and responsibilities should match PA/SI if USACE element input required.	Execute, approve	Coordinate	Coordinate	Review

Table 4-5
Technical Roles and Responsibilities of USACE Elements for LLRW and MW Projects and Submittals, CERCLA or RCRA Site Prioritization and Delineation Phase

CERCLA or RCRA Stage	Activity	HTRW Design District	USACE District	USACE Division	MCX	HQ USACE
Hazard Ranking System (HRS) under CERCLA	HRS scoring is done by EPA after the SI.					
National Priorities List (NPL) under CERCLA	EPA uses HRS score to determine if site becomes NPL site. NPL site requires remedial investigations/ feasibility studies (RI/FS) and record of decision (ROD).					
RCRA has no equivalent process to HRS scoring	Possible to have a site with dual regulatory authority. Federal CERCLA group and federal/ state RCRA may both claim authority.	Initiate a Federal Facility Agreement among the State, EPA, NRC, DOE, DA, and customer as necessary.	Coordinate	Review	Review	Approve

Table 4-6
Technical Roles and Responsibilities of USACE Elements for LLRW and MW Projects and Submittals, CERCLA or RCRA Site investigation and Planning Phase

CE=RCLA or RRA Stage	Activity	HTRW Design District	USACE District	USACE Division	QA Lab	HTRW CX	HQ USACE
Remedial Investigationר/ Feasibility Study	–Scope of work –Work plan development –Data quality officers (DQOs) –SSHP –SAP – Regulatory coordination/permits, applicable or relevant and appropriate requirement (A RARs), compliance – Field investigations –Sample analyses, data assessment –Quality assurance/quality control –Baseline risk assessment – Remedial alternatives development and screening –Treatability studies –RI report – Detailed analysis of alternatives –Feasibility study (FS) report –Management	Execute, approve	Coordinate	Coordinate	Review, approve	Review, monitor	Monitor
RCRA Facility Investigation (RFI)/Corrective Measures Study (CMS)	The RFI/CMS share many of the same activities as the RI/FS. USACE elements should match the roles and responsibilities under the CERCLA process.	Execute, approve	Coordinate	Coordinate	Review, approve	Review, monitor	Monitor

Table 4-7
Technical Roles and Responsibilities of USACE Elements for LLRW and MW Projects and Submittals, CERCLA or RCRA Decision Process Phase

CERCLA or RCRA Stage	Activity	HTRW Design District	USACE District	USACE Division	HTRW CX	HQ USACE
Record of Decision (ROD) for NPL Sites	– Preparation of ROD (nonSuperfund)	Execute, Approval	Coordinate	Review	Review	Approve
Statement of Basis	– Regulatory agency selects the remedy and the media cleanup standards	Execute	Coordinate	Review	Review	Approve
Non-NPL sites but still under CERCLA	– Determine if state has removal or remediation authority –Follow national contingency plan if state has no authority	Execute	Coordinate	Review	Review	Approve

operational but at such time as the facilities are constructed and approved there will arise a major LLRW generation as a by-product of HLRW disposal activities under DOE auspices.

(4) The DOE presents its regulations, both internal and pertaining outside its agency, in the form of numbered orders. These are listed, among other locations, in DOE Order 6430. la, "General Design Criteria. " DOE

Table 4-8
Technical Roles and Responsibilities of USACE Elements for LLRW and MW Projects and Submittals, CERCLA or RCRA Site Implementation Phase

CERCLA or RCRA Stage	Activity	HTRW Design District	USACE District	USACE Division	QA Lab	HTRW CX	HQ USACE	Executive Agent
Remedial Design	— Contract procurement — Scope of work, work plan, addnl studies, and investigations –Plans, specs, and design analyses –Health and safety –Chemical data –Geotechnical data	Execute	Coordinate	Monitor	Review, approve	Review, monitor		Monitor
Remedial Action	– Review and approve contractor submittals –Work plans –SHP –SAP	Coordinate	Execute	Monitor	?	Review, monitor		Monitor
Corrective Measures Implementation (CMI)	The RCRA process shares many of the CERCLA activities. Roles and responsibilities should be applied accordingly	Execute design	Coordinate	Coordinate		Review, monitor	Approve	Monitor
CERCLA removal actions may be implemented at any time during the investigation or remediation. The NCP must be followed	—Time critical removal actions do not require prior documentation or a decision document –Non-time critical removals (> 6 mos planning) require a decision document (EE/CA or equivalent)	Execute design	Execute remedial action	Monitor	Review	Review, monitor	Approve	
Engineering Evaluation Cost Estimate (EE/CA)	Required for non-time critical removal actions	Execute document	Execute removal action	Monitor		Review, monitor	Approve	Monitor
RCRA Corrective Actions	Corrective actions authority under Part B permit is with EPA or authorized state. EPA/state are authorized to mandate corrective action in any situation with a significant problem	Coordinate	Execute	Monitor	Review	Review, monitor		Monitor

orders incorporate and augment practices developed by its predecessors: the AEC and the ERDA. DOE orders are in the process of being codified in draft form as 10 CFR 834, 835, et al.

c. NRC.

(1) The NRC has the responsibility for assuring and maintaining public health and safety as they may be affected by commercial nuclear facilities. This mandate includes the licensing and regulation of facilities for the disposal of LLRW generated by commercial agencies.

(2) While the mandate of the NRC is oriented toward commercial LLRW generators, transporters, and disposers, other Federal agencies having responsibility for LLRW generation, transportation, and disposal acknowledge NRC regulation. This blurring of the boundaries between commercial and governmental realms most often arises because of varying degrees of commercially contracted operation of the facilities. USACE will comply with NRC regulations addressing LLRW. USACE will comply with NRC regulations concerning the radioactive components of MW while scrutinizing those

Table 4-9
Technical Roles and Responsibilities of USACE Elements for LLRW and MW Projects and Submittals, CERCLA or RCRA Disposal of LLRW or MW Phase

CERCLA or RCRA Stage	Activity	HTRW Design District	USACE District	USACE Division	HTRW CX	Executive Agent
Disposal	– EA/Compacts for LLRW –Disposal to EnviroCare (MW) –Decontamination control facility (DCF)/ disposal or storage – Coordination with Regulatory Agencies – MCX Coordinates with EA – EA Approval	Coordinate	Execute	Monitor	Review, monitor	Approve

Table 4-10
Technical Roles and Rasponsibilities of USACE Elements for LLRW and MW Projects and Submittals, CERCLA or RCRA Post-Closure Phase

CERCLA or RCRA Stage	Activity	HTRW Design District	USACE District	USACE Division	HTRW CX	HQ USACE
CERCLA Sites (FUDS)	Review every 5 yr until NPL deletion	Coordinate	Execute	Monitor	Review, monitor	Monitor
CERLA Sites (BRAC and IRP)	Installation or major Army command (MACOM)	Coordinate	Execute upon request	Monitor	Review, monitor	Monitor

actions for conflict with EPA regulations on the chemical components.

(3) The NRC provides formal regulatory control of LLRW through 10 CFR 20,[1] "Standards for Protection Against Radiation" and 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Wastes. "

d. EPA. The EPA regulates hazardous and mixed wastes because of requirements within the National Environmental Policy Act (NEPA), the RCRA, the CERCLA, and their amendments. RCRA mandates cleanup of contamination regardless of when waste was disposed of. CERCLA mandates cleanup of abandoned hazardous sites. The RCRA, in 40 CFR, Part 261, Subpart D, lists more than 400 specific substances which must be considered hazardous. Determination of waste as controlled by the RCRA is also based on characteristics and properties of mixtures by specifically stated rules. Determination of the hazardous nature of the waste is the responsibility of the waste generator. In 1986, the Superfund Amendments and Reauthorization Act established a National Priorities List of major sites contaminated by past practices which would be restored under the jurisdiction of CERCLA, as amended.

e. 0SHA. Requirements for the protection of workers engaged in hazardous waste operations are set forth by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). OSHA regulations dealing with facets of LLRW and MW site remediation and waste disposal include Chapter 29; Parts 1910 and 1926 of the Code of Federal Regulations (CFR). A unique site-specific safety and health plan is required for all remedial actions which shall address the safety and health hazards of hazardous-waste site operations including those dealing with LLRW and MW. Specific points to be addressed in the required documentation include designation of onsite personnel responsible for safety and health, characterizing onsite hazards training, personal protective equipment, monitoring strategies, medical surveillance, site control, decontamination, standard operating procedures, emergency contingency planning, safety meetings and inspections, and provisions for plan changes.

[1] Codes of Federal Regulations (CFR) may be found in Appendix C.

f. DOT. The DOT regulates the interstate transport of any radioactive and other hazardous material shipments. This mandate is made by Chapter 49 of the Code of Federal Regulations. 10 CFR 71 and 49 CFR 170 through 189 also regulate the transportation of nuclear materials, including LLRW and MW.

g. Interstate compacts.

(1) Table 4-11 describes State Compact Agreement memberships as of June 1994.

(2) LLRW disposal facilities. Table 4-12 describes the stages of development of compacts and individual states towards establishing LLRW disposal capacity.

(3) Responsibilities of host state. Each compact, as a whole, selects the host state for a future LLRW disposal facility. From that point, the host state is responsible for facility development and regulation and establishes its own standards and procedures for licensing and control of the facility and LLRW handling. The host state must satisfy the requirements of the Federal regulatory structure concerning LLRW, but otherwise is free to follow its own approach. Therefore, the LLRW disposal regulations established in compacts are diverse. Varying degrees of public participation in the establishment of host state LLRW regulations have occurred and, to some extent, have resulted in regulatory structures which are more stringent and comprehensive than those of the Federal government.

h. Individual states. States may regulate the management of radioactive waste per delegation from the NRC as NRC agreement states. States may regulate the management of hazardous waste per EPA authorization as RCRA authorized states.

4-2. Roles and Responsibilities of States and Compacts Concerning MW

a. Past actions and present status. Individual states and existing disposal facility operators have undertaken their own actions concerning MW disposal. The commercial operator of the LLRW disposal facility near Hanford, WA, elected not to obtain the state-mandated RCRA disposal permit and ceased to dispose of MW. The state of South Carolina expressly prohibited disposal of MW at the LLRW disposal facility near Barnwell. As of mid-1991, a commercial disposal facility, Envirocare, offers its services in Tooele County, UT, to include MW and other radioactive wastes specified in their charter from the state of Utah. It is the only commercial MW disposal facility known in the United States at this time. There are a number of commercial ventures that recycle, incinerate, or otherwise accept for conversion certain specific types of M W.

b. RCRA impacts on MW disposal. MW is now formally subject to dual regulation under both RCRA and the Atomic Energy Act. That essentially defines the regulators as the EPA and NRC, respectively. RCRA allows the EPA to delegate to a state agency the authority to regulate hazardous waste; the NRC agreement state program allows similar delegation of LLRW responsibilities. The EPA assumed responsibility for enforcing, under RCRA, and CERCLA, the regulations incorporating M W.

(1) Current authorization. A state may be granted responsibility for full regulation of MW by the EPA if it has adopted specific MW legislation. States may have RCRA base authorization but still not be authorized to regulate MW. In those states and territories not having been granted regulatory responsibility for MW or not having RCRA base authorization, the EPA regulates disposition of MW. The status of state responsibilities for MW regulation must be updated prior to each project because of the continual evolution of regulatory responsibilities. This may be done by calling the EPA hotline phone number (1-800-424-9346).

(2) Past practice facilities. RCRA regulations allow application for interim status of hazardous waste disposal facilities already in existence prior to 1980. Special application procedures for MW disposal at existing facilities were established in 1988. A primary requirement for the final RCRA permitting of a facility is corrective attention to any previous releases of hazardous constituents.

(3) Joint guidance. Section 105 of the Federal Facilities Compliance Act of 1992 contains the Mixed Waste Amendment. This section amends RCRA and requires DOE to submit plans and schedules to EPA and to authorized states on how MW would be managed at each DOE site. These plans and schedules should be accounted for by the USACE manager. As of March 1995, the EPA and NRC had not developed joint guidance concerning MW, and, specifically, the remediation of M W past-practice sites. Combined jurisdiction by state agencies, the EPA, and the NRC over M W sites can occur in four ways.

Table 4-11
LLRW Disposal Compact Membership, June 1994 (Low-Level Waste (LLW) Forum 1995)

Compact	Member States and Host Status
Appalachian Compact	Delaware Maryland Pennsylvania--future host state West Virginia
Central Compact	Arkansas Kansas Louisiana Nebraska--future host state Oklahoma
Central Midwest Compact	Illinois--future host state Kentucky
Midwest Compact	Indiana Iowa Minnesota Missouri Ohio--future host state Wisconsin
Northeast Compact	Connecticut--future host state New Jersey--future host state
Northwest Compact	Alaska Hawaii Idaho Montana Oregon Utah Washington--current and future host state Wyoming
Rocky Mountain Compact Northwest Compact accepts Rocky Mountain Compact LLRW as agreed between Compacts	Colorado Nevada New Mexico
Southeast Compact	Alabama Florida Georgia Mississippi North Carolina--future host state South Carolina--current host state Tennessee Virginia
Southwestern Compact	Arizona California--future host state North Dakota South Dakota
Texas Compact Compact agreement awaiting Congressional consent	Maine Texas--future host state Vermont
Unaffiliated States	District of Columbia Massachusetts--future host state Michigan New Hampshire New York--future host state Puerto Rico Rhode Island North Carolina

Table 4-12
Commercial LLRW Disposal Capacity Development Status (LLW Forum 1995)

Compacts/ States	Host	Siting	License	Facility Open
Appalachian	Pennsylvania	Siting process under way	Application early 1997 (est.)	Mid-1999 (est.)
Central	Nebraska	Site selected	Application submitted	Autumn 1999 (est.)
Central Midwest	Illinois	Siting process under way	Application November 1997 (est.)	July 2000 (est.)
Midwest	Ohio	Enabling legislation expected in 1995	Application 4.25 yr after legislation (est.)	7.25 yr after legislation (est.)
Northeast	Connecticut New Jersey	Siting process under way Siting plan under public review	Application 1999 (est.) Application January 1998 (est.)	2002 (est.) July 2000 (est.)
Northwest	Washington	Facility operational since July 1965, license reissued May 1992		
Rocky Mountain		Contract with Northwest and Washington for disposal at Washington facility		
Southeast	South Carolina	Site selected	Issued April 1971	Operational until 1996 (est.)
Southwestern	California	Site selected	Issued September 1993 (under litigation)	Mid-1997 (est.)
Texas	Texas	Site selected	Application submitted	Mid-1997 (est.)
Massachusetts		Siting process under way	Application January/ February 1998 (est.)	2000/2001 (est.)
New York		Siting process under way	Application June 1999 (est.)	November 2001 (est.)
Michigan		Siting process under development		
District of Columbia		Not siting a facility		
New Hampshire		Not planning to site a facility at this time		
Puerto Rico		Not planning to site a facility at this time		
Rhode Island		Not planning to site a facility at this time		

(a) A state radiation protection agency and a state hazardous waste program can act in an NRC-delegated agreement state which is also authorized under RCRA.

(b) A state radiation protection agency in an NRC-delegated state can act with the EPA if the state has no RCRA authorization.

(c) The NRC can act with a state hazardous waste program where the state is authorized under RCRA.

(d) With neither agreement state nor RCRA authorization, the EPA and NRC regulate M W.

(4) The EPA and NRC find no inconsistencies between their separate regulatory frameworks as they concern M W. Dual authorizations are required, however, as are dual permits. The two agencies' regulations concerning MW are implemented on a site-specific basis coordinated between the agencies and the state and controlled by factors such as the regulatory structure of the state, the characteristics of the M W, the relative risks from toxicity versus radioactivity, etc. Potential problems in permitting MW activities are foreseen by the states in the timing of deadlines mandated by the regulations. These same problems will be presented to USACE as it deals with MW site remediation, and, as it stands, will require clarification from both NRC and EPA on the same case-by-case basis as do the states.